

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/AU03/00760

|   |  |   |
|---|--|---|
| <b>A. CLASSIFICATION OF SUBJECT MATTER</b>  |  |   |
| Int. Cl. <sup>7</sup> : E21D 20/02, 21/00   |  |   |
| According to International Patent Classification (IPC) or to both national classification and IPC   |  |   |
| <b>B. FIELDS SEARCHED</b>   |  |   |
| Minimum documentation searched (classification system followed by classification symbols)<br>IPC: E21D 20/02, 20/00, 21/00  |  |   |
| Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched<br>AU: E21D 20/02 (1920 -1976)  |  |   |
| Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)<br>WPAT: sleeve+ and deform+   |  |   |
| <b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>   |  |   |
| Category*   | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No.   |
| A   | DE 29712094 U1 (BERMULLER & CO. GmbH) 23 October 1997<br>See whole document        | 1   |
| A   | DE 4204533 A1 (GD ANKER GmbH) 19 August 1993<br>See whole document                 | 1   |
| A   | EP 207030 B (ATLAS COPCO AB) 6 December 1989<br>See whole document                 | 1   |
| <input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex   |  |   |
| <p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p> |  |   |
| Date of the actual completion of the international search<br>2 September 2003   |  | Date of mailing of the international search report<br>9 SEP 2003      |
| Name and mailing address of the ISA/AU<br>AUSTRALIAN PATENT OFFICE<br>PO BOX 200, WODEN ACT 2606, AUSTRALIA<br>E-mail address: pct@ipaustalia.gov.au<br>Facsimile No. (02) 6285 3929  |  | Authorized officer<br>BARRY STEPHENS<br>Telephone No : (02) 6283 2106 |

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| C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT |   |                       |
|---|---|-----------------------|
| Category*   | Citation of document, with indication, where appropriate, of the relevant passages                    | Relevant to claim No. |
| A   | US 5018919 (STEPHAN) 28 May 1991<br>See whole document  | 1                     |
| A   | AU 200068072 A1 (SPRINGVALE COAL PTY LTD) 26 April 2001<br>See whole document                         | 1                     |
| X   | Derwent Accession No. 89-252469/35, Class Q49,<br>SU 1460313 A (AS SIBE MINING INST) 23 February 1989 | 1, 19                 |

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## Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos :  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos :  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos :  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

## Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

(see Supplemental Box)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-11, and 19-24

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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## Supplemental Box

(To be used when the space in any of Boxes I to VIII is not sufficient)

### Continuation of Box No: II

1. Claims 1-11 are directed to a tube for rock bolts comprising a tube extruded from plastics material deformed beyond its yield point at each of a plurality of longitudinally spaced apart locations extending along the length of the tube, said deformation at each location occurring in at least two different directions. It is considered that this arrangement comprises a first "special technical feature".

(Note: while the method of claims 19-24 for fabricating a tube for a rock bolt is not limited to tubes that are extruded from plastics material, the remaining features of the tube are identical to that of claims 1-11, and may therefore be searched therewith)

2. Claims 12-18 are directed to an end fitting for a rock bolt comprising a generally barrel-like shape having a front end, a rear wall, a curved side wall, a longitudinal axis, a (cable) tendon passageway extending between the front and rear ends, and a grouting orifice in said front end leading into said passageway. It is considered that this arrangement comprises a second "special technical feature".

3. Claims 25 -26 directed to a rock bolt for use in poor ground conditions, including anchor means comprising at least two anchor devices connected in series on said bolt adjacent to its far end to anchor the far end adjacent the base of a blind hole formed in the ground, and tension means at the near end of the bolt to tension it after anchoring. It is considered that this arrangement comprises a third "special technical feature".

(Note: claims 27-28 directed to a method of securing a rock bolt in poor ground conditions is not limited to using a bolt having anchor devices connected in series: however they may be searched together with claims 25-26)

As these groups of claims do not share any of the identified "special technical features", a technical relationship as defined in Rule 13.2 of the PCT regulations does not exist.

Accordingly, the international application does not relate to a single invention, or to a single inventive concept

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

| Patent Document Cited in<br>Search Report |           |      | Patent Family Member |    |          |    |         |
|---|-----------|------|----------------------|----|----------|----|---------|
| DE  | 29712094  | NONE |                      |    |          |    |         |
| DE  | 19971023  | DE   | 4201533              |    |          |    |         |
| EP  | 207030    | AT   | 48464                | AU | 58772/86 | CA | 1257976 |
|   |           | DE   | 3667318              | EP | 207030   | FI | 862545  |
|   |           | JP   | 62050600             | NO | 862361   | SE | 8502981 |
|   |           | ZA   | 8604497              | CS | 8609385  | HU | 57305   |
| US  | 5018919   | AT   | 98743                | AU | 53086/90 | DE | 4011900 |
|   |           | EP   | 394179               |    |          |    |         |
| AU  | 200068072 | NONE |                      |    |          |    |         |
| SU  | 1460313   | NONE |                      |    |          |    |         |
| END OF ANNEX                              |           |      |                      |    |          |    |         |